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Atty. Docket No. 04853.0059	Serial No. 09/763,590
Applicant Kazunari TAIRA <i>et al.</i>	
Filing Date February 26, 2001	Group: 1635

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U.S. PATENT DOCUMENTS

Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate

FOREIGN PATENT DOCUMENTS

	Document Number	Publication Date	Country	Class	Sub Class	Translation Yes or No
KAL	WO 94/00012	Jan. 6, 1994	WIPO			
KAL	WO 96/22368	Jul. 25, 1996	WIPO			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

KAL	Domi <i>et al.</i> , "Transcripts Containing A Small Anti-HIV Hammerhead Ribozyme That Are Active In The Cell Cytoplasm But Inactive <i>In Vitro</i> As Free mRNAs," <i>Biochimie</i> , 78: 654-662, 1996.
KAL	European Search Report for Application No. 99940588.9, mailed October 21, 2002.
KAL	Homann <i>et al.</i> , "Incorporation Of The Catalytic Domain Of A Hammerhead Ribozyme Into Antisense RNA Enhances Its Inhibitory Effect On The Replication Of Human Immunodeficiency Virus Type 1," <i>Nucleic Acids Research</i> , 21: 2809-2814, 1993.
KAL	Rossi <i>et al.</i> , "Ribozymes as Anti-HIV-1 Therapeutic Agents: Principles, Applications, And Problems," <i>AIDS Research and Human Retroviruses</i> , 8: 183-189, 1992.
KAL	Sakamoto <i>et al.</i> , "Intracellular Cleavage Of Hepatitis C Virus RNA And Inhibition of Viral Protein Translation By Hammerhead Ribozymes," <i>J. Clin. Invest.</i> , 98: 2720-2728, 1996.
KAL	Sun <i>et al.</i> , "Ribozyme-Mediated Suppression of Moloney Murine Leukemia Virus And Human Immunodeficiency Virus Type I Replication In Permissive Cell Lines," <i>Proc. Natl. Acad. Sci. USA</i> , 91: 9715-9719, 1994.
KAL	Weerasinghe <i>et al.</i> , "Resistance To Human Immunodeficiency Virus Type I (HIV-1) Infection In Human CD4+ Lymphocyte-Derived Cell Lines Conferred By Using Retroviral Vectors Expressing An HIV-1 RNA-Specific Ribozyme," <i>J. Virol.</i> , 65: 5531-5534, 1991.

Examiner *Ramona LaCourciere*

Date Considered 03-20-03

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KAL	5,670,361	9/23/97	Wong-Staal <i>et al.</i>	435	240.2	

FOREIGN PATENT DOCUMENTS

Document Number	Publication Date	Country	Class	Sub Class	Translation Yes or No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

KAL	Adachi, <i>et al.</i> , "Production of Acquired Immunodeficiency Syndrome-Associated Retrovirus in Human and Nonhuman Cells Transfected with an Infectious Molecular Clone," <i>Journal of Virology</i> , 59(1): 284-291 (1986).
	Adeniyi-Jones, <i>et al.</i> , "Generation of Long Read-Through Transcripts <i>in vivo</i> and <i>in vitro</i> by Deletion of 3' Termination and Processing Sequences in the Human tRNA ^{met} Gene," <i>Nucleic Acids Res.</i> , 12: 1101-1115 (1984).
	Arnold, <i>et al.</i> , "The Human tRNA ^{val} Gene Family: Organization, Nucleotide Sequences and Homologous Transcription of Three Single-Copy Genes," <i>Gene</i> , 44: 287-297 (1986).
	Arts, <i>et al.</i> , "Identification of a Nuclear Export Receptor for tRNA," <i>Curr. Biol.</i> , 8: 305-314 (1998).
	Bertrand, <i>et al.</i> , "Can Hammerhead Ribozymes be Efficient Tools to Inactivate Gene Function?," <i>Nucleic Acids Res.</i> , 22: 293-300 (1994).
	Bertrand, <i>et al.</i> , "Anti-HIV Therapeutic Hammerhead Ribozymes: Targeting Strategies and Optimization of Intracellular Function," in <i>Nucleic Acids Molecular Biology: Catalytic RNA</i> 310-313 (Eckstein and Lilley eds., 1996).
	Bertrand, <i>et al.</i> , "The Expression Cassette Determines the Functional Activity of Ribozymes in Mammalian Cells by Controlling their Intracellular Localization," <i>RNA</i> , 3: 75-88 (1997).
	Boelens, <i>et al.</i> , "Nuclear Retention of RNA as a Mechanism for Localization," <i>RNA</i> , 1(3): 273-283 (1995).
	Cotten, <i>et al.</i> , "Ribozyme Mediated Destruction of RNA <i>in vivo</i> ," <i>The EMBO Journal</i> , 8(12): 3861-3866 (1989).
	Dahm, <i>et al.</i> , "Role of Divalent Metal Ions in the Hammerhead RNA Cleavage Reaction," <i>Biochemistry</i> , 30(39): 9464-9469 (1991).
✓	Dahm, <i>et al.</i> , "Evidence for the Role of Solvated Metal Hydroxide in the Hammerhead Cleavage Mechanism," <i>Biochemistry</i> , 32 (48): 13040-13045 (1993).

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

KAL	Dropulić, et al., "Functional Characterization of a U5 Ribozyme: Intracellular Suppression of Human Immunodeficiency Virus Type 1 Expression," <i>Journal of Virology</i> , 66(3): 1432-1441 (1992).
	Ferbeyre, et al, "Cell Cycle Arrest Promotes <i>trans</i> -Hammerhead Ribozyme Action in Yeast," <i>The Journal of Biological Chemistry</i> , 271(32):19318-19323 (1996).
	Fujita, et al, "Discrimination of a Single Base Change in a Ribozyme Using the Gene for Dihydrofolate Reductase as a Selective Marker in <i>Escherichia coli</i> ," <i>Proceedings of the National Academy of Sciences</i> , 94(2): 391-196 (1997).
	Gebhard, et al, "Use of a Nonviral Vector to Express a Chimeric tRNA-Ribozyme Against Lymphocytic Choriomeningitis Virus: Cytoplasmic Accumulation of a Catalytically Competent Transcript but Minimal Antiviral Effect," <i>Antisense & Nucleic Acid Drug Development</i> , 7(1): 3-11 (1997).
	Good, et al., "Expression of Small, Therapeutic RNAs in Human Cell Nuclei," <i>Gene Therapy</i> , 4(1): 45-54 (1997).
	Guerrier-Takada, et al., "The RNA Moiety of Ribonuclease P is the Catalytic Subunit of the Enzyme," <i>Cell</i> , 35(3): 849-857 (1983).
	Hamblet, et al., "Mitochondrial DNA Deletion Analysis: A Comparison of PCR Quantitative Methods," <i>Biochemical and Biophysical Research Communications</i> , 207(2): 839-847 (1995).
	Haseloff et al., "Simple RNA Enzymes with New and Highly Specific Endoribonuclease Activities," <i>Nature</i> , 334(6183): 585-591 (1988).
	Huang, et al., "Role of Polyadenylation in Nucleocytoplasmic Transport of mRNA," <i>Molecular and Cellular Biology</i> , 16(4): 1534-1542 (1996).
	Inokuchi, et al., "A Hammerhead Ribozyme Inhibits the Proliferation of an RNA Coliphage SP in <i>Escherichia coli</i> ," <i>The Journal of Biological Chemistry</i> , 269(15): 11361-11366 (1994).
	Ilves, et al., "Retroviral Vectors Designed for Targeted Expression of RNA Polymerase III-Driven Transcripts: A Comparative Study," <i>Gene</i> , 171(2): 203-208 (1996).
	Jennings, et al., "Inhibition of SV40 Replicon Function by Engineered Antisense RNA Transcribed by RNA Polymerase III," <i>The EMBO Journal</i> , 6(10): 3043-3047 (1987).
	Kawasaki, et al, "Selection of the Best Target Site for Ribozyme-Mediated Cleavage Within a Fusion Gene for Adenovirus E1A-Associated 300 kDa Protein (p300) and Luciferase," <i>Nucleic Acids Research</i> , 24(15): 3010-1016 (1996).
	Kawasaki, et al., "Distinct Roles of the Co-Activators p300 and CBP in Retinoic-Acid-Induced F9-Cell Differentiation," <i>Nature</i> , 393: 284-289 (1998).
	Kruger, et al., "Self-Splicing RNA: Autoexcision and Autocyclization of the Ribosomal RNA Intervening Sequence of <i>Tetrahymena</i> ," <i>Cell</i> , 31(1): 147-157 (1982).
✓	Lott, et al., "A Two-Metal Ion Mechanism Operates in the Hammerhead Ribozyme-Mediated Cleavage of an RNA Substrate," <i>Proceedings of the National Academy of Sciences</i> , 95(2): 542-547 (1998).

Karen O'Connor

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

KAL	Ohkawa, et al., "Importance of Independence in Ribozyme Reactions: Kinetic Behavior of Trimmed and of Simply Connected Multiple Ribozymes with Potential Activity Against Human Immunodeficiency Virus," <i>Proceedings of the National Academy of Sciences</i> , 90(23): 11302-11306 (1993).
	Ojwang, et al., "Inhibition of Human Immunodeficiency Virus Type 1 Expression by a Hairpin Ribozyme," <i>Proceedings of the National Academy of Sciences</i> , 89(22): 10802-10806 (1992).
	Ozawa, et al., "Quantitative Determination of Deleted Mitochondrial DNA Relative to Normal DNA in Parkinsonian Striatum by a Kinetic PCR Analysis," <i>Biochemical and Biophysical Research Communications</i> , 172(2): 483-489 (1990).
	Perriman, et al., "Effective Ribozyme Delivery in Plant Cells," <i>Proceedings of the National Academy of Sciences</i> , 92(13): 6175-6179 (1995).
	Pontius, et al., "Observations on Catalysis by Hammerhead Ribozymes are Consistent with a Two-Divalent-Metal-Ion Mechanism," <i>Proceedings of the National Academy of Sciences</i> , 94(6): 2290-2294 (1997).
	Prisley, et al., "Use of Adenoviral VAI Small RNA as a Carrier for Cytoplasmic Delivery of Ribozymes," <i>RNA</i> , 3(6): 677-687 (1997).
	Rossi, et al., "RNA Enzymes (Ribozymes) as Antiviral Therapeutic Agents," <i>Trends in Biotechnology</i> , 8: 179-183 (1990).
	Rossi, "Controlled, Targeted, Intracellular Expression of Ribozymes: Progress and Problems," <i>Trends in Biotechnology</i> , 13: 301-306 (1995).
	Sarver, et al., "Ribozymes as Potential Anti-HIV-1 Therapeutic Agents," <i>Science</i> , 247: 1222-1225 (1990).
	Shimada, et al., "Targeted and Highly Efficient Gene Transfer into CD4 Cells by a Recombinant Human Immunodeficiency Virus Retroviral Vector," <i>Journal of Clinical Investigations</i> , 88: 1043-1047 (1991).
	Smith, et al., "Transfer RNA in Reticulocyte Maturation," <i>Biochimica et Biophysica Acta</i> , 655(2): 195-198 (1981).
	Sullenger, et al., "Expression of Chimeric tRNA-Driven Antisense Transcripts Renders NIH 3T3 Cells Highly Resistant to Moloney Murine Leukemia Virus Replication," <i>Molecular and Cellular Biology</i> , 10(12): 6512-6523 (1990).
	Sullenger, et al., "Tethering Ribozymes to a Retroviral Packaging Signal for Destruction of Viral RNA," <i>Science</i> , 262: 1566-1569 (1993).
	Taira, et al., "Construction of a Novel RNA-Transcript-Trimming Plasmid Which can be Used both <i>in vitro</i> in Place of Run-Off and (G)-Free Transcriptions and <i>in vivo</i> as Multi-Sequences Transcription Vectors," <i>Nucleic Acids Research</i> , 19(19): 5152-5130 (1991).
✓	Thomas, et al., "Site-Directed Mutagenesis by Gene Targeting in Mouse Embryo-Derived Stem Cells," <i>Cell</i> , 51(3): 503-512 (1987).

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KAL	Thompson, et al., "Improved Accumulation and Activity of Ribozymes Expressed from a tRNA-Based RNA Polymerase III Promoter," <i>Nucleic Acids Research</i> , 3(12): 2259-2268 (1995).
	Tobian et al., "tRNA Nuclear Transport: Defining the Critical Regions of Human tRNA ^{met} by Point Mutagenesis," <i>Cell</i> , 43: 415-422 (1985).
	Uhlenbeck, "A Small Catalytic Oligoribonucleotide," <i>Nature</i> , 328 (6131): 596-600 (1987).
	Yamada, et al., "Activity and Cleavage Site Specificity of an Anti-HIV-1 Hairpin Ribozyme in Human T Cells," <i>Virology</i> , 205(1): 121-126 (1994).
	Yamada, et al., "Intracellular Immunization of Human T Cells with a Hairpin Ribozyme Against Human Immunodeficiency Virus Type 1," <i>Gene Therapy</i> , 1(1): 38-45 (1994).
	Yates, et al., "A cis-Acting Element from the Epstein-Barr Viral Genome that Permits Stable Replication of Recombinant Plasmids in Latently Infected Cells," <i>Proceedings of the National Academy of Sciences</i> , 81(12): 3806-3810 (1984).
	Yu, et al., "A Hairpin Ribozyme Inhibits Expression of Diverse Strains of Human Immunodeficiency Virus Type 1," <i>Proceedings of the National Academy of Sciences</i> , 90(13): 6340-6344 (1993).
	Zhao, et al., "Generating Loss-of-Function Phenotypes of the <i>fushi tarazu</i> Gene with a Targeted Ribozyme in <i>Drosophila</i> ," <i>Nature</i> , 365(6445): 448-451 (1993).
	Zhou, et al., "Ribozyme Mechanism Revisited: Evidence Against Direct Coordination of a Mg ²⁺ Ion with the pro-R Oxygen of the Scissile Phosphate in the Transition State of a Hammerhead Ribozyme-Catalyzed Reaction," <i>Journal of the American Chemical Society</i> , 118(37): 8969-8970 (1996).
	Zhou, et al., "Explanation by the Double-Metal-Ion Mechanism of Catalysis for the Differential Metal Ion Effects on the Cleavage Rates of 5'-oxy and 5'-thio Substrates by a Hammerhead Ribozyme," <i>Proceedings of the National Academy of Sciences</i> , 94(26): 14343-14348 (1997).
↓	Zhou, et al., "The Hydrolysis of RNA: From Theoretical Calculations to the Hammerhead Ribozyme-Mediated Cleavage of RNA," <i>Chemical Reviews</i> , 98(3): 991-1026 (1998).

Examiner	Karl A. Lounsbury	Date Considered	03-20-03
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